

REMARKS

Claims 1-62 and 94-100 are canceled. Claims 63-68 have been amended. New claims 110 -112 have been added. Accordingly, claims 63-93, and 101-111 are currently pending in the present application. The amendment to claims do not add any new matter to the application. Support for the amendment of lacking a chaotropic agent can be found on pages 3 and 8 where it is discussed that the present invention uses less hazardous chemicals, including guanidinium isothiocyanate (a chaotropic agent) and throughout the specification where the components of the lysing agent are disclosed (i.e. pages 32, 34, 35, and 43). Support for the amendment to claim 66 can be found on page 10, 20 and 21. Support for the amendment to claim 68 can be found on page 10. Support for new claim 112 having the limitation that "wherein the solid support having both the lysing reagent and the RNA digesting enzyme are dried before addition of the biological material" can be found on page 20: "preferably the lysing reagent is applied to the solid support and then dried on the solid support before contact with the biological material."

Claim rejections 35 U.S.C. § 103

Rejection of 63-67, 69-73, 81-82, 84, 87-90, and 101-109 under 35 U.S.C. § 103 over Harvey, in view of Rudi as evidence by Ahmed.

The examiner has rejected claims 63-67, 69-73, 81-82, 84, 87-90, and 101-109 under 35 U.S.C. § 103 over Harvey, in view of Rudi as evidence by Ahmed. The claims have been amended so that the lysing reagent is said to contain a detergent but not to have a chaotropic agent. Harvey does not teach this limitation and it is not cured by the secondary references. The examiner has correctly noted that Harvey specifically teaches impregnating the absorbent material with a guanidine thiocyanate solution. One skilled in the art would appreciate that Harvey is using guanidine thiocyanate (which is a chaotropic agent) as the lysing agent.

Applicants point out that the present claims require that the solid support is treated with a lysing reagent before the biological material containing the DNA is added to the support. Since the pretreated solid support material in the present claims also has RNase adsorbed thereto, it has to be guaranteed that both components maintain their activity when contacting the biological material. Hence, the present claims require: "[the

lysing reagent] is of a type suitable to preserve the RNA digesting function of the RNA digesting enzyme.” One skilled in the art would appreciate that it is not possible to have a long contact between the lysing reagent (comprising a detergent such as SDS) and RNase without the RNase being inactivated when both components are in the liquid phase. Thus a combination with Rudi or Shieh does not cure the deficiencies and it would not be obvious to combine Harvey and Rudi or Shieh to arrive at the present invention. In Rudi, the RNase is in liquid form and added to the cells after they are bound to the solid support. Thus, Rudi does not teach or suggest removing unbound RNA digesting enzyme from the solid support before the biological material is contacted with the solid support. Shieh does not even teach or suggest a lysing agent comprising a detergent and an RNA digesting enzyme and as such does not cure the deficiencies of Harvey and Rudi.

Thus, the combination of the these referenced do not teach or suggest each and every claim element in the claims. As such, applicants request withdrawal over this ground of rejection.

Rejection of claims 63-67, 69, 71-73, 81-90, 84, 87-90, and 101-109 under 35 U.S.C. § 103 over Boom, in view of Shieh and Rudi.

The examiner has rejected claims 63-67, 69, 71-73, 81-90, 84, 87-90, and 101-109 under 35 U.S.C. § 103 over Boom, in view of Shieh and Rudi. As discussed above, the claims have been amended so that the lysing reagent is said to contain a detergent but not to have a chaotropic agent. Boom does not teach this limitation and the Examiner has correctly noted that Boom specifically teaches a solid support having been treated with a chaotropic lysing substance. The other references do not cure this deficiency because they do not also teach each and every element of the claim and there is no motivation to combine the references to arrive at the present invention.

Applicants point out that the present claims require that the solid support is treated with a lysing reagent before the biological material containing the DNA is added to the support. Since the pretreated solid support material in the present claims also has RNase adsorbed thereto, it has to be guaranteed that both components maintain their activity when contacting the biological material. Hence, the present claims require: “[the

lysing reagent] is of a type suitable to preserve the RNA digesting function of the RNA digesting enzyme." One skilled in the art would appreciate that it is not possible to have a long contact between the lysing reagent (comprising a detergent such as SDS) and RNase without the RNase being inactivated when both components are in the liquid phase. Thus a combination with Rudi or Shieh does not cure the deficiencies and it would not be obvious to combine Boom and Rudi or Shieh to arrive at the present invention. In Rudi, the RNase is in liquid form and added to the cells after they are bound to the solid support. Thus, Rudi does not teach or suggest removing unbound RNA digesting enzyme from the solid support before the biological material is contacted with the solid support. Shieh does not teach or suggest a lysing agent comprising a detergent and an RNA digesting enzyme and as such does not cure the deficiencies of Boom and Rudi.

Thus, the combination of the these referenced do not teach or suggest each and every claim element in the claims. As such, applicants request withdrawal over this ground of rejection.

Rejection of claims 63-67, 69-85, 87-90, 94-96, 101-109 under 35 U.S.C. § 103 over Deggerdal, in view of Shieh and Rudi.

The examiner has rejected claims Rejection of claims 63-67, 69-85, 87-90, 94-96, 101-109 under 35 U.S.C. § 103 over Deggerdal, in view of Shieh and Rudi. The present claims require a pretreated solid support having the lysing agent and the RNA digesting enzyme adsorbed thereto before the biological sample is added to the support. The present claims require that both the lysing agent and the RNA digesting enzyme be bound to the support before the biological material is added and also requires that excess is removed before the biological material is added. Deggerdal does not teach this element and neither do Rudi or Shieh. Thus a combination with Rudi or Shieh does not cure the deficiencies and it would not be obvious to combine Deggerdal and Rudi or Shieh to arrive at the present invention. In Rudi, the RNase is in liquid form and added to the cells after they are bound to the solid support. Thus, Rudi does not teach or suggest removing unbound RNA digesting enzyme from the solid support before the biological material is contacted with the solid support. Shieh does not teach or suggest a lysing agent

comprising a detergent and an RNA digesting enzyme and as such does not cure the deficiencies of Deggerdal and Rudi.

Thus, the combination of the these referenced do not teach or suggest each and every claim element in the claims. As such, applicants request withdrawal over this ground of rejection.

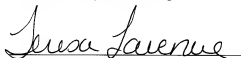
Rejection of claims in Office action paragraphs 9-12 under 35 U.S.S. § 103 over Boom or Deggerdal or Harvey in view of Shieh and Rudi, and further in view of Su or Arnold.

As discussed above, Deggerdal, Boom or Harvey in combination with Shieh and/or Rudi do not teach or suggest all of the limitations of the claims nor provide any motivation to combine the references to arrive at the present claims. Neither Su nor Arnold correct these deficiencies. As such, applicants request withdrawal over this ground of rejection.

CONCLUSION

Applicants believe that the claims are in condition for allowance and respectfully request such allowance. The Examiner is invited and encouraged to contact the undersigned at 703/394-2273 to discuss any matter in this application.

Respectfully submitted,
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